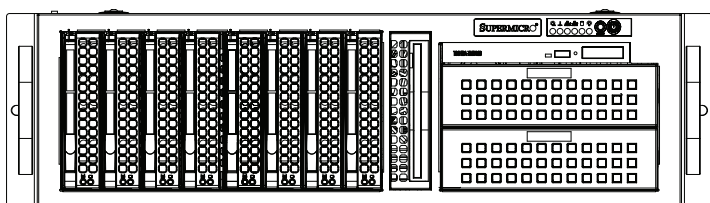


SUPERO[®]

SC835 Chassis Series



SC835TQ - R800B

USER'S MANUAL

1.0b

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Release Date: December 16, 2009

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Preface

About This Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the SC835 3U chassis. Installation and maintenance should be performed by experienced technicians only.

Supermicro's SC835 3U chassis features a unique and highly-optimized design for dual-core Xeon platforms. The chassis is equipped with a redundant 800W high-efficiency power supply. High-performance fans provide ample optimized cooling for FB-DIMM memory modules and 8 hot-swappable drive bays offer maximum storage capacity in a 3U form factor.

This document lists compatible parts available when this document was published. Always refer to the our Web site for updates on supported parts and configurations.

Manual Organization

Chapter 1: Introduction

The first chapter provides a checklist of the main components included with this chassis and describes the main features of the SC835 chassis. This chapter also includes contact information.

Chapter 2: System Safety

This chapter lists warnings, precautions, and system safety. You should thoroughly familiarize yourself with this chapter for a general overview of safety precautions that should be followed before installing and servicing this chassis.

Chapter 3: Chassis Components

Refer here for details on this chassis model including the fans, bays, airflow shields, and other components.

Chapter 4: System Interface

Chapter 4 provides details on the system interface, which includes the functions and information provided by the control panel on the chassis as well as other LEDs located throughout the system.

Chapter 5: Chassis Setup and Maintenance

Refer to this chapter for detailed information on this chassis. You should follow the procedures given in this chapter when installing, removing, or reconfiguring your chassis.

Chapter 6: Rack Installation

This chapter details information on chassis rack installation. You should follow the procedures given in this chapter when installing, removing or reconfiguring your chassis into a rack environment.

Appendix A: SC835 Chassis Cables

Appendix B: SC835 Power Supply Specifications

Appendix C: SAS-833TQ Series Backplane

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Appendix A SC835 Chassis Cables

Appendix B SC835 Power Supply Specifications

Appendix C SAS-833TQ Backplane Specifications

Notes

Chapter 1

Introduction

1-1 Overview

Supermicro's SC835 3U chassis features a unique and highly-optimized design. The chassis is equipped with a redundant high-efficiency power supply. High-performance fans provide ample optimized cooling and 8 hot-swappable drive bays offer maximum storage capacity in a 3U form factor.

1-2 Shipping List

Part Numbers

Please visit the following link for the latest shipping lists and part numbers for your particular chassis model:

<http://www.supermicro.com/products/chassis/3U/?chs=835>

SC835 Chassis Series				
Model	CPU	HDD	I/O Slots	Power Supply
SC835TQ-R800B	DP/UP	8x 3.5" SAS / SATA hot swappable drive trays	7x FF	R800W

1-3 Chassis Features

The SC835 high-performance chassis includes the following features:

CPU Support

The SC835 chassis supports Intel and AMD Quad processors. Please refer to the motherboard specifications pages on our Web site for updates on supported processors for this chassis, at www.supermicro.com.

Hard Drives

The SC835 chassis features eight slots for 3.5" SAS/SATA drives. These drives are hot swappable. Once setup correctly, these drives can be removed without powering down the server. In addition, these drives support SES2 (SAS/SATA).

I/O Expansion slots

Each version of the SC835 chassis includes 7 full-height, full-length I/O expansion slots.

Peripheral Drives

Each SC835 chassis supports either one slim 8x DVD drive or one 24x CD. These drives allow you to quickly install or save data.

Other Features

Other onboard features are included to promote system health. These include various six cooling fans, a convenient power switch, reset button, and LED indicators.

1-4 Contacting Supermicro

Headquarters

Address: Super Micro Computer, Inc.
980 Rock Ave.
San Jose, CA 95131 U.S.A.

Tel: +1 (408) 503-8000

Fax: +1 (408) 503-8008

Email: marketing@supermicro.com (General Information)
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4F, No. 232-1, Liancheng Rd.
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Taiwan, R.O.C.

Tel: +886-(2) 8226-3990

Fax: +886-(2) 8226-3991

Web Site: www.supermicro.com.tw

Technical Support:

Email: support@supermicro.com.tw

Tel: 886-2-8226-1900

Notes

Chapter 2

System Safety

2-1 Overview

This chapter provides a quick setup checklist to get your chassis up and running. Following the steps in order given should enable you to have your chassis setup and operational within a minimal amount of time. These instructions assume that you are an experienced technician, familiar with common concepts and terminology.

2-2 Warnings and Precautions

You should inspect the box the chassis was shipped in and note if it was damaged in any way. If the chassis itself shows damage, file a damage claim with the carrier who delivered your system.

Decide on a suitable location for the rack unit that will hold the chassis. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated.

You will also need it placed near at least two grounded power outlets. The SC835 chassis includes two redundant power supplies which require two grounded outlets.

2-3 Preparing for Setup

The SC835 chassis includes a set of rail assemblies, and the mounting brackets and mounting screws you will need to install the system into a rack. Please read this manual in its entirety before you begin the installation procedure.

2-4 Electrical Safety Precautions

Basic electrical safety precautions should be followed to protect yourself from harm and the SC835 from damage:

- Be aware of the locations of the power on/off switch on the chassis as well as the room's emergency power-off switch, disconnection switch or electrical outlet. If an electrical accident occurs, you can then quickly remove power from the system.
- Do not work alone when working with high-voltage components.
- Power should always be disconnected from the system when removing or installing main system components, such as the serverboard, memory modules and the DVD-ROM (not necessary for hot-swappable drives). When disconnecting power, you should first power-down the system with the operating system and then unplug the power cords from all the power supply modules in the system.
- When working around exposed electrical circuits, another person who is familiar with the power-off controls should be nearby to switch off the power, if necessary.
- Use only one hand when working with powered-on electrical equipment. This is to avoid making a complete circuit, which will cause electrical shock. Use extreme caution when using metal tools, which can easily damage any electrical components or circuit boards they come into contact with.
- Do not use mats designed to decrease electrostatic discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.
- The power supply power cord must include a grounding plug and must be plugged into grounded electrical outlets.
- Serverboard battery: CAUTION - There is a danger of explosion if the onboard battery is installed upside down, which will reverse its polarities. This battery must be replaced only with the same or an equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

- Please handle used batteries carefully. Do not damage the battery in any way; a damaged battery may release hazardous materials into the environment. Do not discard a used battery in the garbage or a public landfill. Please comply with the regulations set up by your local hazardous waste management agency to dispose of your used battery properly.
- DVD-ROM laser: CAUTION - This server may have come equipped with a DVD-ROM drive. To prevent direct exposure to the laser beam and hazardous radiation exposure, do not open the enclosure or use the unit in any unconventional way.

2-5 General Safety Precautions

- Keep the area around the chassis clean and free of clutter.
- Place the chassis top cover and any system components that have been removed away from the system or on a table so that they won't accidentally be stepped on.
- While working on the system, do not wear loose clothing such as neckties and unbuttoned shirt sleeves, which can come into contact with electrical circuits or be pulled into a cooling fan.
- Remove any jewelry or metal objects from your body, which are excellent metal conductors that can create short circuits and harm you if they come into contact with printed circuit boards or areas where power is present.
- After accessing the inside of the system, close the system back up and secure it to the rack unit with the retention screws after ensuring that all connections have been made.

2-6 System Safety

Electrostatic discharge (ESD) is generated by two objects with different electrical charges coming into contact with each other. An electrical discharge is created to neutralize this difference, which can damage electronic components and printed circuit boards. The following measures are generally sufficient to neutralize this difference before contact is made to protect your equipment from ESD:

- Do not use mats designed to decrease electrostatic discharge as protection from electrical shock. Instead, use rubber mats that have been specifically designed as electrical insulators.

- Use a grounded wrist strap designed to prevent static discharge.
- Keep all components and printed circuit boards (PCBs) in their antistatic bags until ready for use.
- Touch a grounded metal object before removing any board from its antistatic bag.
- Do not let components or PCBs come into contact with your clothing, which may retain a charge even if you are wearing a wrist strap.
- Handle a board by its edges only; do not touch its components, peripheral chips, memory modules or contacts.
- When handling chips or modules, avoid touching their pins.
- Put the serverboard and peripherals back into their antistatic bags when not in use.
- For grounding purposes, make sure your computer chassis provides excellent conductivity between the power supply, the case, the mounting fasteners and the serverboard.

Chapter 3

Chassis Components

3-1 Overview

This chapter describes the most common components included with your chassis. Some components listed may not be included or compatible with your particular chassis model. For more information, see the installation instructions detailed later in this manual.

3-2 Components

Chassis and Hard Drive Bays

The SC835 chassis supports either one slim 8x DVD or one 24x CD-ROM drive. It includes eight hard drive bays. Most chassis models include a DVD-ROM. Hard drives must be purchased separately. For the latest shipping lists, visit our Web site at: <http://www.supermicro.com>.

Backplane

Each SC835 chassis comes with a 3U backplane. Depending on our order, your backplane will accept SAS/SATA drives or SAS only. For more information regarding compatible backplanes, view the appendices found at the end of this manual. In addition, visit our Web site for the latest information: <http://www.supermicro.com>.

Fans

The SC835 chassis accepts three 8cm hot-swappable fans and two 8cm rear exhaust fans. System fans for SC835 chassis are powered from the serverboard. These fans are 3U compatible and are powered by 3-pin connectors.

Mounting Rails

The SC835 can be placed in a rack for secure storage and use. To set up your rack, follow the step-by-step instructions included in this manual.

Power Supply

Each SC835 chassis model includes two redundant high-efficiency hot-swappable power supplies rated at 800 Watts. In the unlikely event of a failure in one of the power supplies, you can remove and replace the faulty power supply without powering down the system.

Air Shroud

Air shrouds are shields, usually plastic, that funnel air directly to where it is needed. **Always use the air shroud included with your chassis.**

3-3 Where to get Replacement Components

although not frequently, you may need replacement parts for your system. To ensure the highest level of professional service and technical support, we strongly recommend purchasing exclusively from our Supermicro Authorized Distributors/System Integrators/Resellers. A list of Supermicro Authorized Distributors/System Integrators/Reseller can be found at: <http://www.supermicro.com>. Click the Where to Buy link.

Chapter 4

System Interface

4-1 Overview

There are several LEDs on the control panel as well as others on the drive carriers to keep you constantly informed of the overall status of the system as well as the activity and health of specific components. Most SC835 models have two buttons on the chassis control panel: a reset button and an on/off switch. This chapter explains the meanings of all LED indicators and the appropriate response you may need to take.

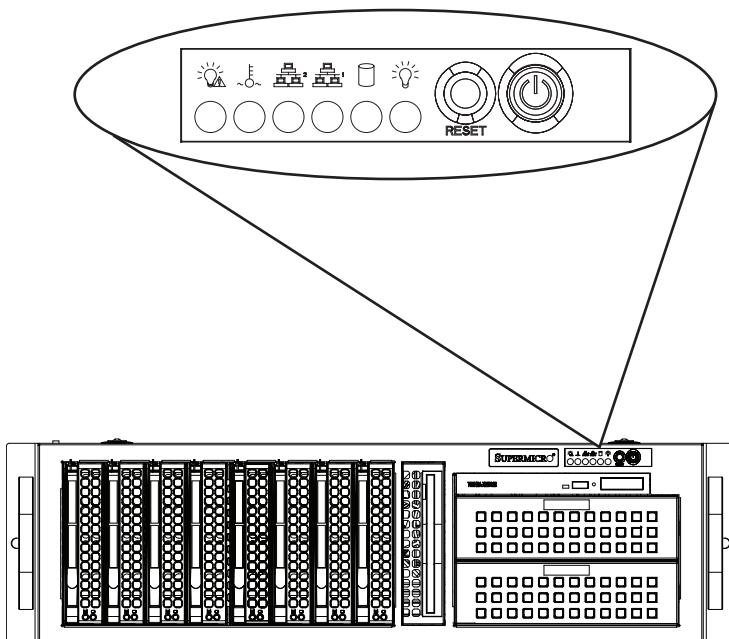
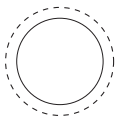


Figure 4-1: SC835 Front Panel

4-2 Control Panel Buttons

There are two push-buttons located on the front of the chassis. These are (in order from left to right) a reset button and a power on/off button.



- **Reset:** The reset button is used to reboot the system.



- **Power:** The main power switch is used to apply or remove power from the power supply to the server system. Turning off system power with this button removes the main power but keeps standby power supplied to the system. Therefore, you must unplug system before servicing.

4-3 Control Panel LEDs

The control panel located on the front of the SC835 chassis has six LEDs. These LEDs provide you with critical information related to different parts of the system. This section explains what each LED indicates when illuminated and any corrective action you may need to take.



- **Power Failure:** When this LED flashes, it indicates a power failure in the power supply.



- **Overheat/Fan Fail:** When this LED flashes it indicates a fan failure. When continuously on (not flashing) it indicates an overheat condition, which may be caused by cables obstructing the airflow in the system or the ambient room temperature being too warm. Check the routing of the cables and make sure all fans are present and operating normally. You should also check to make sure that the chassis covers are installed. Finally, verify that the heatsinks are installed properly. This LED will remain flashing or on as long as the overheat condition exists.



- **NIC2:** Indicates network activity on LAN2 when flashing.



- **NIC1:** Indicates network activity on LAN1 when flashing.



- **HDD:** Indicates IDE channel activity. SAS/SATA drive and/or DVD-ROM drive activity when flashing.



- **Power:** Indicates power is being supplied to the system's power supply units. This LED should normally be illuminated when the system is operating.

4-4 Drive Carrier LEDs

Each SAS drive carrier has two LEDs.

- **Blue:** When illuminated, this blue LED (on the front of the drive carrier) indicates drive activity. A connection to the SAS backplane enables this LED to blink on and off when that particular drive is being accessed.
- **Red:** The red LED to indicate a drive failure. If one of the SAS drives fail, you should be refer to your system management software.

Chapter 5

Chassis Setup and Maintenance

5-1 Overview

This chapter details the basic steps required to install components to the chassis. The only tool you will need is a Phillips screwdriver. Print this page to use as a reference while setting up your chassis.

When coupled with an SAS-833TQ backplane, this chassis is capable of failover, and cascading. Review Appendix C in this manual for setup instructions.



Review the warnings and precautions listed in the manual before setting up or servicing this chassis. These include information in Chapter 2: System Safety and the warning/precautions listed in the setup instructions.

5-2 Removing the Chassis Cover

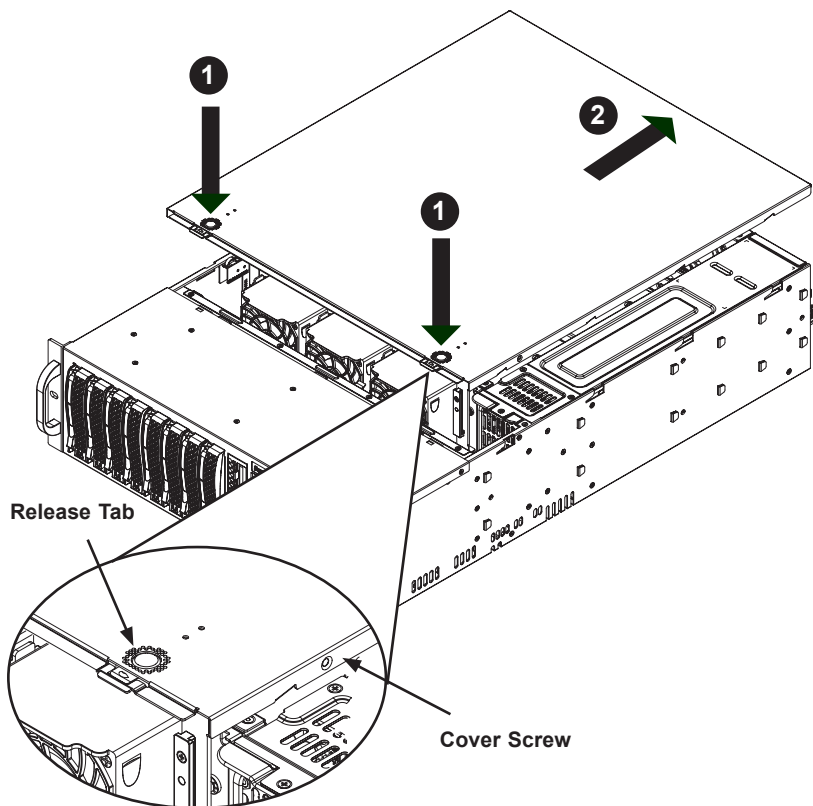


Figure 5-1: Removing the Chassis Cover

Removing the Chassis Cover

1. Press the release tabs to release the cover from the locked position. Press both tabs at the same time. It may also be necessary to remove the chassis cover screw.
2. Once the top cover is released from the locked position, slide the cover toward the rear of the chassis and lift the cover off the unit.



Warning: Except for short periods of time, do NOT operate the chassis without the cover in place. The chassis cover must be in place to allow proper airflow and prevent overheating.

5-3 Installing the Hard Drives

The drives are mounted in drive carriers to simplify their installation and removal from the chassis.

Removing Hard Drive Carriers From the Chassis

Removing the Hard Drive Carriers

1. Press the release button on the drive carrier. This extends the drive carrier handle.
2. Use the handle to pull the drive carrier out of the chassis.

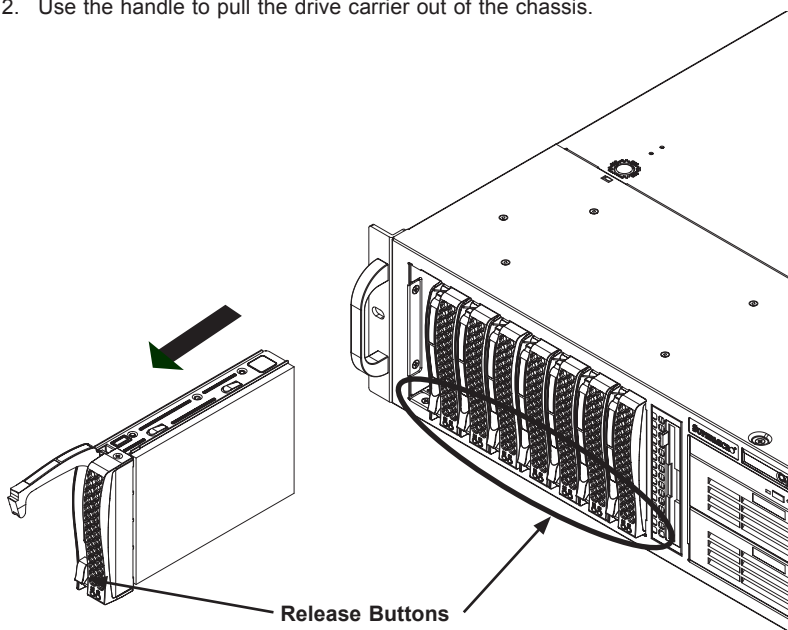


Figure 5-2: Removing the Hard Drive Carriers

Installing a Hard Drive into the Hard Drive Carrier

Installing a Hard Drive

1. Remove the two screws securing the dummy drive to the drive carrier.
2. Lift the dummy drive out of the drive carrier.
3. Place the hard drive carrier on a flat, stable surface such as a desk, table, or work bench.
4. Slide the hard drive into the carrier with the printed circuit board side facing down.
5. Carefully align the mounting holes in the hard drive and the carrier. Make sure the bottom of the hard drive and bottom of the hard drive carrier are flush.
6. Secure the hard drive using all six screws.
7. Replace the drive carrier into the chassis. Make sure to close the drive carrier using the drive carrier handle.

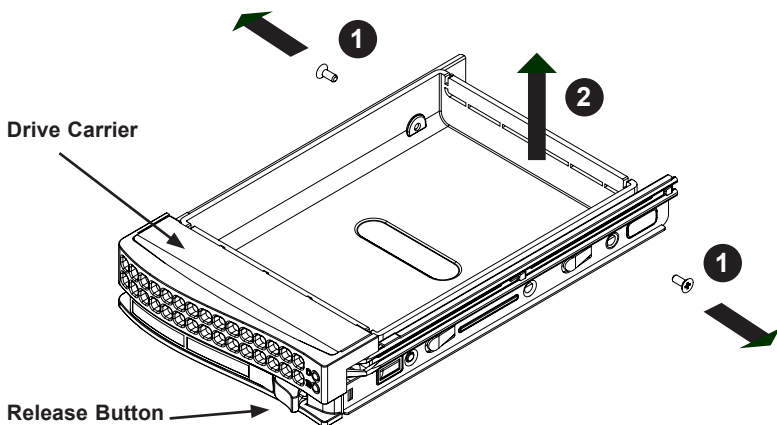


Figure 5-3: Removing the Dummy Drive from the Carrier



Warning! Enterprise level hard disk drives are recommended for use in Supermicro chassis and servers. For information on recommended HDDs, visit the Supermicro Web site at <http://www.supermicro.com/products/info/files/storage/SAS-1-CompList-110909.pdf>

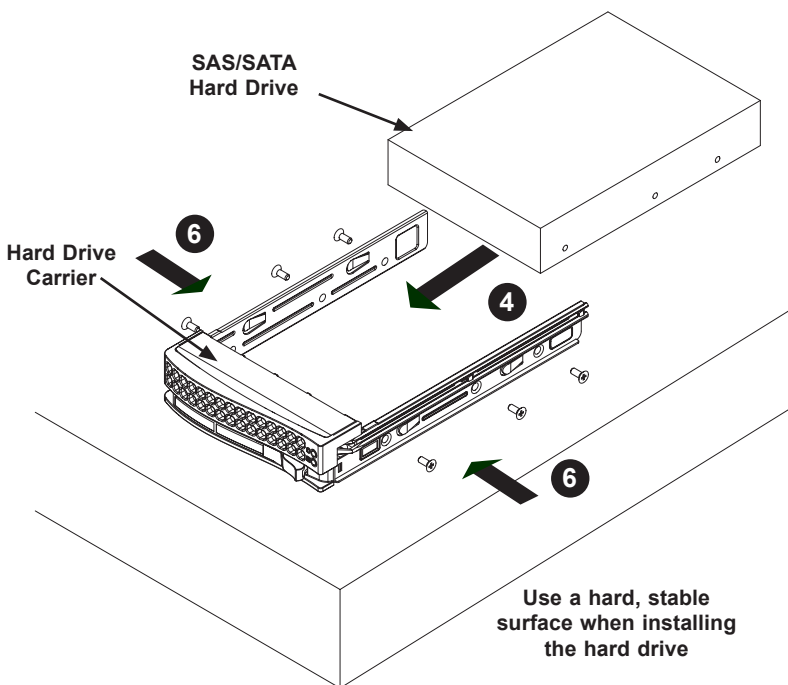


Figure 5-4: Installing a Drive into a Hard Drive Carrier

5-4 Installing the Motherboard

Permanent and Optional Standoffs

Standoffs prevent short circuits by securing space between the motherboard and the chassis surface. The SC835 chassis includes permanent standoffs in locations used by most motherboards. These standoffs accept the rounded Phillips head screws included in the SC835 accessories packaging.

Some motherboards require additional screws for heatsinks, general components and/or non-standard security. Optional standoffs are included to these motherboards. To use an optional standoff, you must secure a hexagonal post by screwing it into the necessary spot.

Standoff Labeling

Standoff locations are labeled on the bottom of the SC835 chassis with the letters: P, D, and A.

P = Most compatible motherboards have a processor or CPU located here. If necessary, place standoffs here for the CPU's heatsink.

D = Place optional standoffs here if your motherboard requires additional posts to hold the unit in place.

A = A number of older motherboards have processors or CPUs located in areas designated "A". Place standoffs here for the CPU's heatsink.

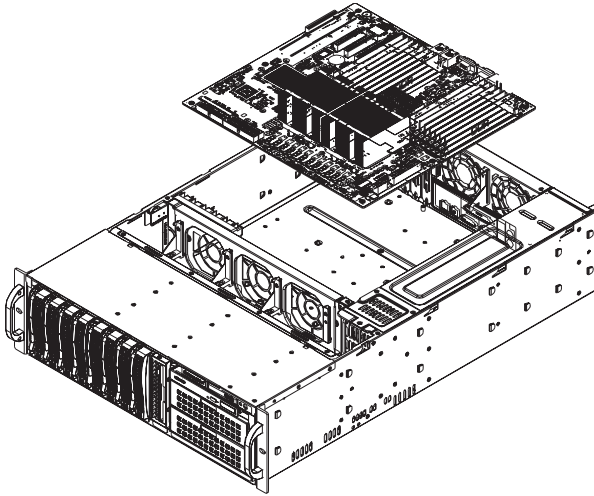


Figure 5-5: Installing the Motherboard
Motherboard Installation

Installing the Motherboard

1. Review the documentation that came with your motherboard. Become familiar with component placement, requirements, and precautions.
2. Confirm that the power supply is disconnected and lay the chassis on a flat surface.
3. Open the chassis cover.
4. Remove any packaging from the chassis. If the rear fans (set of two fans nearest the I/O slots) or the air shroud is in place, remove them.
5. If required by your motherboard, install standoffs in any areas that do not have a permanent standoff. To do this, tighten a hexagonal optional standoff into the chassis.
6. Lay the motherboard on the chassis aligning the permanent and optional standoffs.
7. Secure the motherboard to the chassis using the rounded, Phillips head screws. Do not exceed eight lbs of torque when tightening down the motherboard
8. Secure the CPU(s) and heatsinks to the motherboard

I/O Shield and Expansion Card Setup

The SC835 chassis includes space for an I/O shield and up to seven add-on/expansion cards.

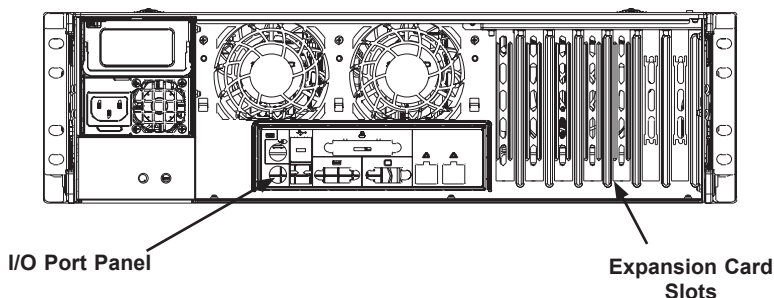


Figure 5-6: SC835 Chassis Add-On Card Slots and I/O Ports

Installing an Add-On or Expansion Card

Installing Expansion Cards

1. Remove the chassis cover.
2. Locate the motherboard port aligned with the card slot you want to install.
3. Each slot is secured by one screw located on the top (inside) the chassis. Remove this screw.
4. Gently slide the expansion card into the correct motherboard slot. If the expansion card requires a riser card, install it at this time. If necessary, slide the card into the PCI card guide and lock it. Never force a component into a motherboard or the chassis.
5. Secure the expansion card with the screw from the I/O panel.

Installing an I/O Shield

Installing an I/O Shield

1. Remove the chassis cover.
2. Locate the I/O shield.
3. Depending on your motherboard, you must remove the existing I/O shield and replace it with the new one or use the existing the shield to slide the ports through.
4. Connect the I/O shield to the motherboard following the motherboard documentation.

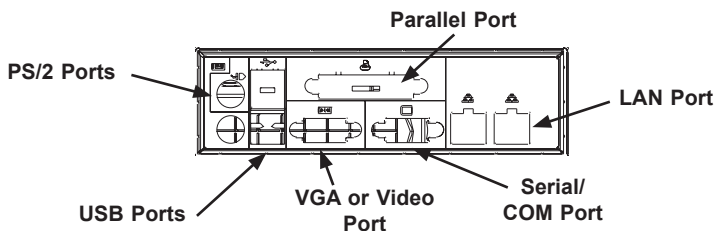


Figure 5-7: SC835 Chassis I/O Shield

5-5 Installing the Air Shroud, Rear Fan, and Checking Air Flow

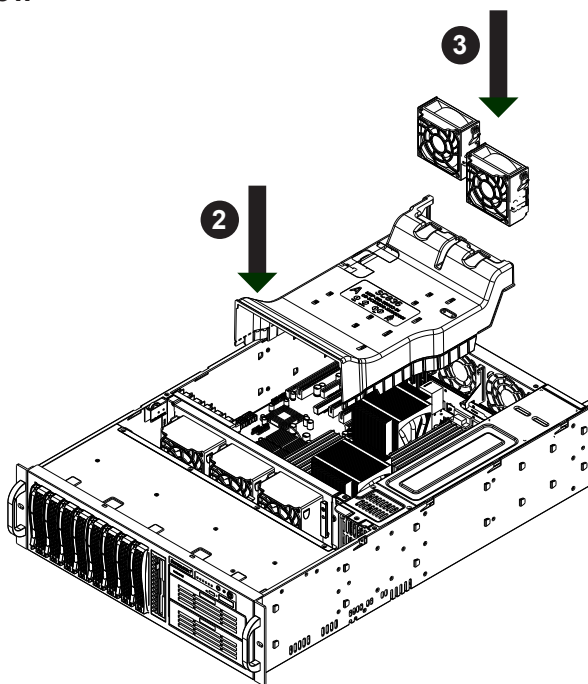


Figure 5-8: Installing the Air Shroud

Air shrouds concentrate airflow to maximize fan efficiency. The SC835 chassis air shroud does not require screws to set it up. Note that the rear fans must be removed prior to installing the air shroud.

Installing the Air Shroud

1. Check that the rear fans have been removed from the chassis.
2. Place the air shroud over the motherboard as illustrated above, aligning the air shroud between the front and rear fans.
3. Install the rear fans behind the air shroud. See the Rear System Fans section of this chapter for additional details.

5-6 Chassis Maintenance

System Fans

Five heavy-duty fans provide cooling for the chassis. These fans circulate air through the chassis as a means of lowering the chassis' internal temperature. The SC835 chassis includes three front fans and two rear fans.

SC835 chassis fans are fully hot-swappable. In other words, fans may be removed and replaced without having to power-down the server.

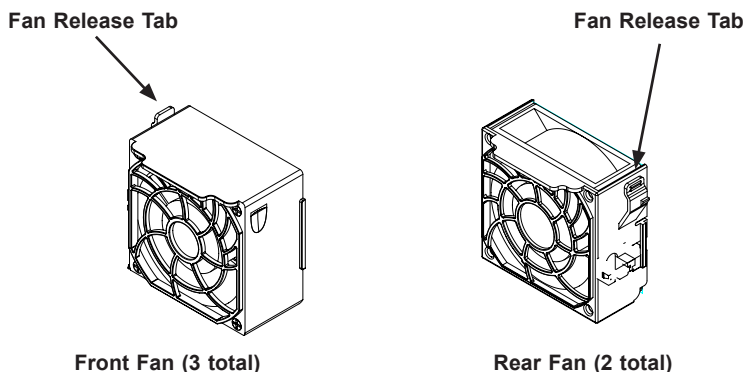


Figure 5-9: Chassis Fans

Replacing a System Fan

Installing a System Fan

1. Open the chassis and locate the faulty fan. Never run the chassis for an extended period of time with the chassis open.
2. Press the release tab on the fan and pull the fan upward.
3. Slide the new fan into the fan housing. Make sure the power connectors are correctly aligned. The new fan will be immediately active.

Rear System Fans

The SC835 chassis includes three front fans and two rear fans. The front fans are pre-installed. The rear fans must be installed after motherboard and air shroud setup.

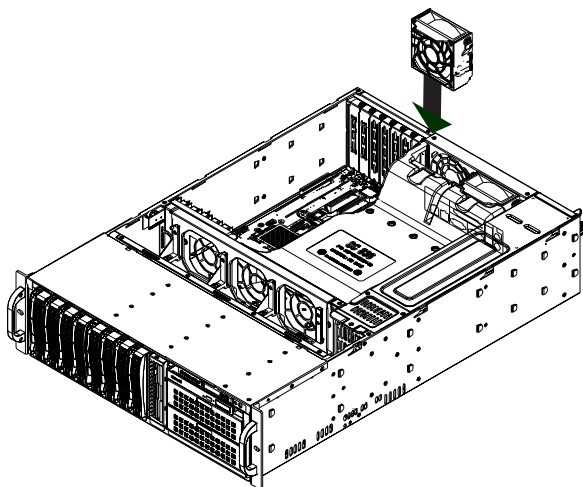


Figure 5-10: Installing the Rear Fan

Installing the Rear System Fans

Installing a the Rear System Fans

1. Confirm that the air shroud is correctly placed.
2. Slide the rear fan into the slot as illustrated. The fan release tab should be on the side closest to the power supply.
3. Make sure that the fan is secure in the fan housing and the housing is correctly connected to the power supply.

Checking the Server's Air Flow

Checking the Air Flow

1. Make sure there are no objects to obstruct airflow in and out of the server. If necessary, route the cables through the cable rack.
2. Do not operate the chassis without drives or drive trays in the drive bays.
3. Use only recommended server parts.
4. Make sure no wires or foreign objects obstruct air flow through the chassis. Pull all excess cabling out of the airflow path or use shorter cables.
5. Do not operate the server for extended periods of time without the air shroud in the proper place.

5-7 Power Supply

The power supply for the SC835 chassis is redundant and hot-swappable, meaning that the power supply can be changed without powering down the system.

Replacing the Power Supply

Replacing the Power Supply

1. The SC835 chassis includes a redundant power supply (at least two power modules). The server may continue running if only one power supply module is removed at a time.
2. Unplug the power supply that will be replaced.
3. Push the release tab on the back of the power supply.
4. Pull the power supply out using the handle.
5. Replace the failed power module with another of the same model.
6. Push the new power supply module into the power bay until it clicks into the locked position.
7. Plug the AC power cord back into the module and power up the server.

Replacing the Power Distributor

Redundant server chassis that are 2U in height or higher, require a power distributor. The power distributor provides failover and power supply redundancy. In the unlikely event you must replace the power distributor, do following

Installing the Power Distributor

1. Power down the server and remove the plug from the wall socket or power strip.
2. Remove all cable connections from the power supply to the motherboard, backplane, and other components. Also, remove both power supplies.
3. Locate the power distributor between the power supply and the fan row.
4. Remove the three screws securing the power supply.
5. Gently pull the power distributor from the chassis. Make the guide all the cables through the power distributor housing.
6. Slide the new power distributor module into the power distributor housing. Make that you slide the cables through the bottom of the housing.
7. Reconnect all the power cables, replace the power supply, and insert the plug into the wall.

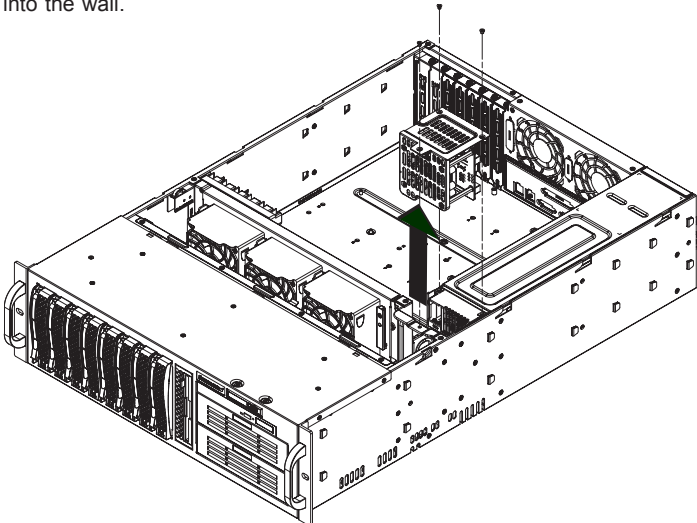


Figure 5-11: Removing the Power Distributor

Replacing the DVD or CD-ROM Drive

SC835 chassis models support either a slim 8x DVD-ROM, 24x CD or DVD-ROM drive. Use these instructions in this section in the unlikely event that you must replace any of these components.

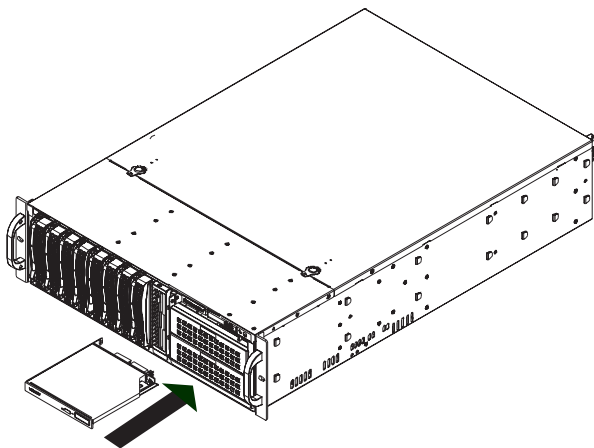


Figure 5-12: Installing the DVD-ROM, Front Panel, or CD-ROM

Replacing or Installing the DVD Drive

Installing a DVD or CD-ROM Drive

1. Power down and unplug the system
2. Remove the chassis cover.
3. **If a new front port panel is not being installed**, remove the mini-bezel from the drive bay. The mini-bezel is the small grating that covers the drive bay. Remove this by simply pulling it out of the bay.
If a new front port panel is being installed, remove the old drive by depressing the release tab, then pulling the drive out of the chassis.
4. Insert the new drive unit in the slot until the tab locks into place.
5. Connect the data and power cables to the backplane and, if necessary, motherboard.

For more information, see the Appendix C in the back of this manual.

Chapter 6

Rack Installation

6-1 Overview

This chapter provides a quick setup checklist to get the chassis up and running. Following these steps in the order given should enable you to have the system operational within a minimum amount of time.

6-2 Unpacking the System

Inspect the box the chassis was shipped in and note if it was damaged in any way. If the chassis itself shows damage you should file a damage claim with the carrier who delivered it.

Decide on a suitable location for the rack unit that will hold the chassis. It should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated. You will also need it placed near a grounded power outlet. Be sure to read the Rack and Server Precautions in the next section.

6-3 Preparing for Setup

The box the chassis was shipped in includes one set of rail assemblies (two inner rails and 2 outer rails) and the mounting screws you will need to install the system into the rack. Please read this section in its entirety before beginning the installation procedure outlined in the sections that follow.

Choosing a Setup Location

- Leave enough clearance in front of the rack to enable you to open the front door completely (~25 inches).
- Leave approximately 30 inches of clearance in the back of the rack to allow for sufficient airflow and ease in servicing.

- This product is for installation only in a Restricted Access Location (dedicated equipment rooms, service closets and similar environments).



Warnings and Precautions!



Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are fully extended to the floor with the full weight of the rack resting on them.
- In single rack installation, stabilizers should be attached to the rack.
- In multiple rack installations, the racks should be coupled together.
- Always make sure the rack is stable before extending a component from the rack.
- You should extend only one component at a time - extending two or more simultaneously may cause the rack to become unstable.

General Server Precautions

- Review the electrical and general safety precautions that came with the components you are adding to your chassis.
- Determine the placement of each component in the rack *before* you install the rails.
- Install the heaviest server components on the bottom of the rack first, and then work up.
- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges, voltage spikes and to keep your system operating in case of a power failure.
- Allow the hot plug hard drives and power supply modules to cool before touching them.

- Always keep the rack's front door and all panels and components on the servers closed when not servicing to maintain proper cooling.

Rack Mounting Considerations

Ambient Operating Temperature

If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the ambient temperature of the room. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature.

Reduced Airflow

Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.

Mechanical Loading

Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.

Circuit Overloading

Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on overcurrent protection and power supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Reliable Ground

A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (i.e. the use of power strips, etc.).

6-4 Rack Mounting Instructions

This section provides information on installing the SC835 chassis into a rack unit with the quick-release rails provided. There are a variety of rack units on the market, which may mean the assembly procedure will differ slightly. You should also refer to the installation instructions that came with the rack unit you are using.

NOTE: This rail will fit a rack between 26" and 33.5" deep.

Separating the Sections of the Rack Rails

The chassis package includes two rail assemblies in the rack mounting kit. Each assembly consists of two sections: an inner fixed chassis rail that secures directly to the server chassis and an outer fixed rack rail that secures directly to the rack itself.

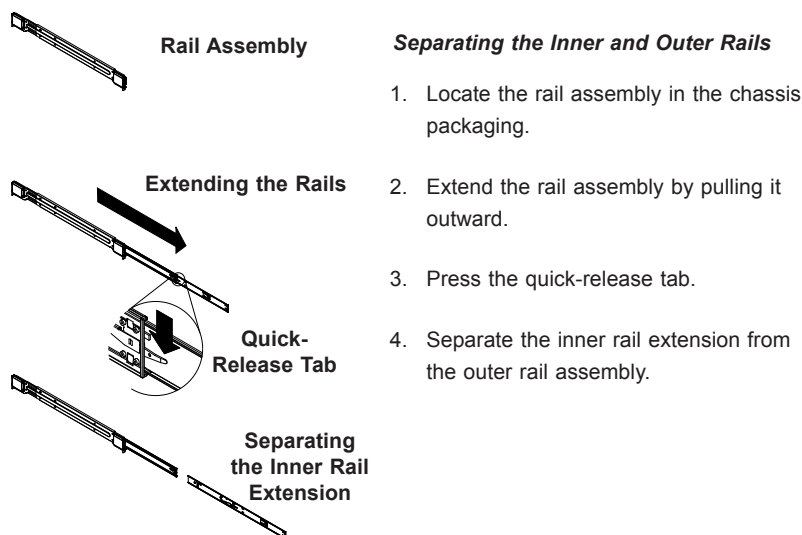


Figure 6-1: Separating the Rack Rails

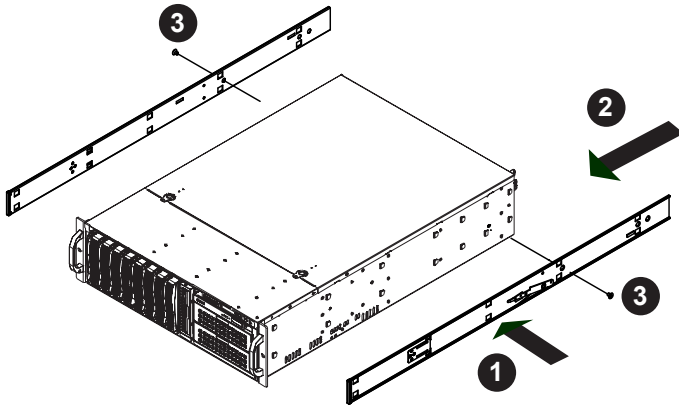


Figure 6-2: Installing the Inner Rail Extensions

Installing the Inner Rail Extension

The SC835 chassis includes a set of inner rails in two sections: Inner rails and inner rail extensions. The inner rails are pre-attached to the chassis, and do not interfere with normal use of the chassis if you decide not to use a server rack. The inner rail extension is attached to the inner rail to mount the chassis in the rack.

Installing the Inner Rails

1. Place the inner rail extensions on the side of the chassis aligning the hooks of the chassis with the rail extension holes. Make sure the extension faces "outward" just like the pre-attached inner rail.
2. Slide the extension toward the front of the chassis.
3. Secure the chassis with two screws as illustrated. Repeat steps 1 and 2 for the other inner rail extension.

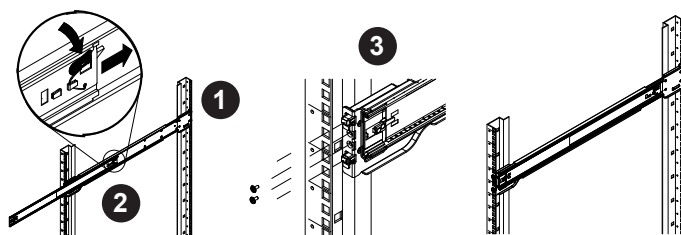


Figure 6-3: Assembling the Outer Rails

Outer Rack Rails

Outer rails attach to the rack and hold the chassis in place. The outer rails for the SC835 chassis extend between 30 inches and 33 inches.

Installing the Outer Rails to the Rack

1. Secure the back end of the outer rail to the rack, using the screws provided.
2. Press the button where the two outer rails are joined to retract the smaller outer rail.
3. Hang the hooks of the rails onto the rack holes and if desired, use screws to secure the front of the outer rail onto the rack.
4. Repeat steps 1-3 for the remaining outer rail.

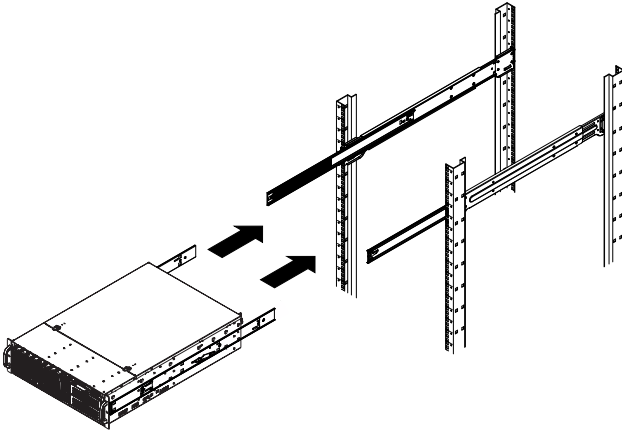


Figure 6-4: Installing the Chassis into a Rack

Installing the Chassis into a Rack

1. Extend the outer rails as illustrated above.
2. Align the inner rails of the chassis with the outer rails on the rack.
3. Slide the inner rails into the outer rails, keeping the pressure even on both sides. When the chassis has been pushed completely into the rack, it should click into the locked position.
4. Optional screws may be used to secure the to hold the front of the chassis to the rack.

Notes

Appendix A

SC835 Chassis Cables

A-1 Overview

This appendix lists supported cables for your chassis system. It only includes the most commonly used components and configurations. For more compatible cables, refer to the manufacturer of the motherboard you are using and our Web site at: www.supermicro.com.

A-2 Cables Included with SC835TQ Chassis (SAS/SATA)

SC835TQ-R800B			
Part #	Type	Length	Description
CBL-0044L	Cable	2'	SATA cable
CBL-0087	Ribbon, Round	20"	16 pin to 16 pin ribbon cable for control panel
CBL-0209L	Wire	210mm	4 pin to 3 pin fan power cable
-	Cable	6'	Regional power cord

A-3 Compatible Cables

This section lists cables included with the SC835 Chassis packages.

Alternate SAS Cables

Some compatible motherboards have different connectors. If your motherboard has only one SAS connector that the SAS cables must share, use one of the following cables. These cables must be purchased separately.

Cable Name: SAS Cable

Quantity: 1

Part #: CBL-0175L

Alt. Name: "Big Four"

Description: This cable has one SFF-8484 (32 pin) connector on one end and 4 SAS connectors (7 pins each) at the other. This cable connects from the Host (motherboard or other controller) to the backplane SAS hard drive port.

Cable Name: SAS Cable

Quantity: 1

Part #: CBL-0116

Alt. Name: iPass or "Small Four"

Description: This cable has one ipass (SFF-8087/mini-sas) connector (36 pins) at one end and 4 SAS connectors on one end. This cable connects from the Host (motherboard or other controller) to the backplane SAS hard drive port.

Cascading/JBOD SAS Cables

Use the following cables when setting up a cascading or JBOD system.



Cable Name: SAS Cable

Quantity: varies by setup

Part #: CBL-0167L

Placement: Internal cable

Ports: Single

Description: Internal cable. Connects the backplane to the Host Bus Adapter (HBA) or external port. Used in single port environments.



Cable Name: SAS Cable

Quantity: varies by setup

Part #: CBL-0168L

Placement: Internal cable

Ports: Dual

Description: Internal cascading cable. Connects the backplane to the Host Bus Adapter (HBA) or external port. Used in Dual port environments.



Cable Name: SAS Cable

Quantity: varies by setup

Part #: CBL-0166L

Placement: External cable

Ports: Single or Dual

Description: External cascading cable. Connects ports between servers. With most connectors, use one cable for single port connections and two cables for dual port connections.

Extending Power Cables

Although Supermicro chassis are designed with to be efficient and cost-effective, some compatible motherboards have power connectors located in different areas.

To use these motherboards you may have to extend the power cables to the motherboards. To do this, use the following chart as a guide.

Power Cable Extenders		
Number of Pins	Cable Part #	Length
24 pin	CB -0042	7.9"(20 CM)
20 pin	CBL-0059	7.9"(20 CM)
8 pin	CBL-0062	7.9"(20 CM)
4 pin	CBL-0060	7.9"(20 CM)

Front Panel to the Motherboard

The SC835 chassis includes a cable to connect the chassis front panel to the motherboard. If your motherboard uses a different connector, use the following list to find a compatible cable.

Front Panel to Motherboard Cable (Ribbon Cable)		
Number of Pins (Front Panel)	Number of Pins (Motherboard)	Cable Part #
16 pin	16 pin	CBL-0049
16 pin	20 pin	CBL-0048
20 pin	20 pin	CBL-0047
16 pin	varies*	CBL-0068
20 pin	varies*	CBL-0067

*Split cables: Use these cables if your motherboard requires several different connections from the front panel.

Notes

Appendix B

SC835 Power Supply Specifications

This appendix lists power supply specifications for your chassis system.

SC835TQ-R800B	
	800W (Redundant)
MFR Part #	PWS-801-1R
Rated AC Voltage	100 - 240V 50 - 60Hz 10A - 4 Amp
+5V standby	4 Amp
+12V	66 Amp
+5V	25 Amp
+3.3V	12 Amp
-12V	0.5 Amp

Power Supply Connections

Connect each of the following cables, as required, by your motherboard manufacturer. In some instances, some cables may not need to be connected.

Power Supply Cables			
Name	Number	Connects to:	Description
20-pin or 24-pin power cable	1	motherboard	20-pin or 24-pin power cable provides electricity to the motherboard. Has twenty to twenty-four yellow, black, gray, red, orange, green and blue wires.
HDD (Hard Drive) power cable	3	backplane	Each cable has two hard drive connectors. Attach the HDD connectors to the backplane.
8-pin motherboard cable	1	motherboard	Provides power to the motherboard CPU. This cable has two black and two yellow wires.
4-pin motherboard cable	1	motherboard	Provides power to PCI expansion card. This cable has two black and two yellow wires.
5-pin SMBus power cable (small)	1	motherboard	Allows the SM (System Management) bus to monitor power supply
2-pin INT cable	1	motherboard	Intrusion detection cable allows the system to log when the server chassis has been opened.

Appendix C

SAS-833TQ Backplane Specifications

To avoid personal injury and property damage, carefully follow all the safety steps listed below when accessing your system or handling the components.

C-1 ESD Safety Guidelines

Electrostatic Discharge (ESD) can damage electronic components. To prevent damage to your system, it is important to handle it very carefully. The following measures are generally sufficient to protect your equipment from ESD.

- Use a grounded wrist strap designed to prevent static discharge.
- Touch a grounded metal object before removing a component from the antistatic bag.
- Handle the backplane by its edges only; do not touch its components, peripheral chips, memory modules or gold contacts.
- When handling chips or modules, avoid touching their pins.
- Put the card and peripherals back into their antistatic bags when not in use.

C-2 General Safety Guidelines

- Always disconnect power cables before installing or removing any components from the computer, including the backplane.
- Disconnect the power cable before installing or removing any cables from the backplane.
- Make sure that the backplane is securely and properly installed on the motherboard to prevent damage to the system due to power shortage.

C-3 An Important Note to Users

- All images and layouts shown in this user's guide are based upon the latest PCB Revision available at the time of publishing. The card you have received may or may not look exactly the same as the graphics shown in this manual.

C-4 Introduction to the SAS-833TQ Backplane

The SAS-833TQ backplane has been designed to utilize the most up-to-date technology available, providing your system with reliable, high-quality performance.

This manual reflects SAS-33TQ Revision 3.00, the most current release available at the time of publication. Always refer to the Supermicro Web site at www.supermicro.com for the latest updates, compatible parts and supported configurations.

Jumper Settings and Pin Definitions

C-5 Front Connectors and Jumpers

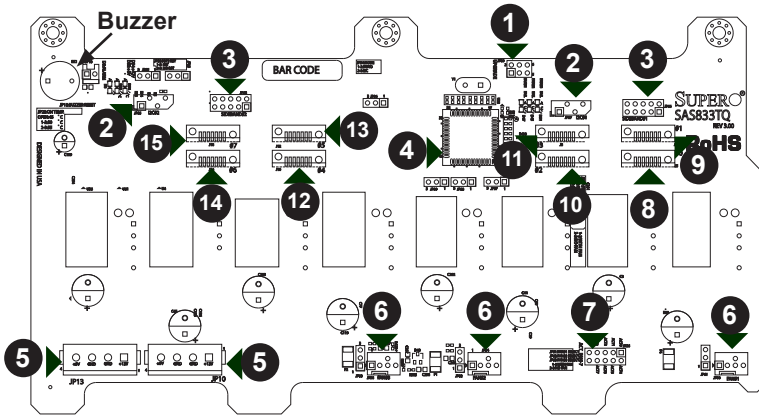


Figure C-1: Front Components

Front Components

Front Jumpers and Components:

1. Upgrade Connector JP69
2. I²C Connector#1 JP37 and I²C Connector#2 JP95
3. Sideband Connector#1 JP66 and Sideband Connector#2 JP68
4. Chip: MG9072
5. Power Connectors (4-pin): JP10 and JP13
6. Fan Connectors: JP54, JP56 and JP60
7. ACT_IN: JP26
8. SAS Port #0 J5
9. SAS Port #1 J6

- 10. SAS Port #2 J7
- 11. SAS Port #3 J8
- 12. SAS Port #4 J10
- 13. SAS Port #5 J12
- 14. SAS Port #6 J14
- 15. SAS Port #7 J16

C-6 Front Connector and Pin Definitions

1. Upgrade Connector

The upgrade connector, designated JP69, is used for manufacturer's diagnostic purposes only.

2. I²C Connectors

The I²C connectors, designated JP37 and JP95, are used to monitor HDD activity and status. See the table on the right for pin definitions.

I ² C Connector Pin Definitions	
Pin#	Definition
1	Data
2	Ground
3	Clock
4	No Connection

3. Sideband Headers

The sideband headers are designated JP66 and JP68. For SES-2 to work properly, you must connect an 8-pin sideband cable. See the table to the right for pin definitions.

NOTE: SGPIO is the default setting for this backplane.

Sideband Headers			
Pin #	Definition	Pin #	Definition
2	SGPIO: SDIN I²C: Backplane Addressing (SB5)	1	Controller ID (SB6)
4	SGPIO: SDOUT I²C: Reset (SB4)	3	GND (SB2)
6	GND (SB3)	5	SGPIO: SLOAD I²C: SDA (SB1)
8	Backplane ID (SB7)	7	SGPIO: SCLOCK I²C: SCL (SB0)
10	No Connection	9	No Connection

4. MG9072 Chip

The MG9072 is an enclosure management chip that supports the SES-2 controller and SES-2 protocols.

5. Backplane Main Power Connectors

The 4-pin connectors, designated JP10 and JP13 provide power to the backplane. See the table on the right for pin definitions.

Backplane Main Power 4-Pin Connector	
Pin#	Definition
1	+12V
2 and 3	Ground
4	+5V

6. Fan Connectors

The 3-pin connectors, designated JP54, JP56, and JP60, provide power to the fans. See the table on the right for pin definitions.

Fan Connectors\	
Pin#	Definition
1	Ground
2	+12V
3	Tachometer

7. Activity LED Header

The activity LED header, designated JP26, is used to indicate the activity status of each SAS drive. The Activity LED Header is located on the front panel. For the Activity LED Header to work properly, connect using a 10-pin LED cable.

SAS Activity LED Header Pin Definitions			
Pin #	Definition	Pin #	Definition
1	ACT IN#0	6	ACT IN#4
2	ACT IN#1	7	ACT IN#5
3	ACT IN#2	8	ACT IN#6
4	ACT IN#3	9	ACT IN#7
5	Ground	10	Empty

8-15. SAS Ports

The SAS ports are used to connect the SAS drive cables. The eight ports are designated #0 - #7. Each port is also compatible with SATA drives.

C-7 Front Jumper Locations and Pin Definitions

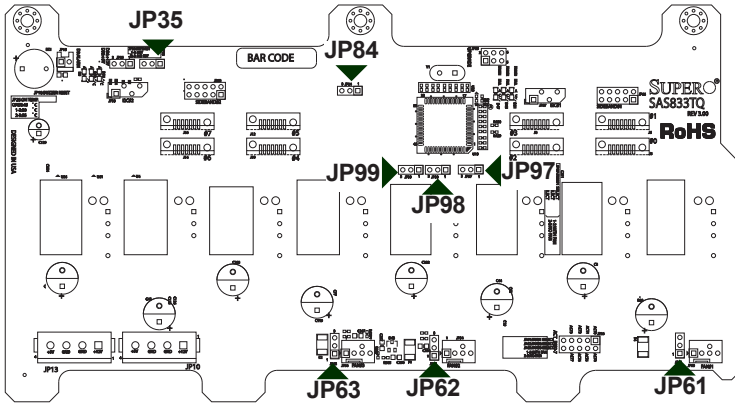
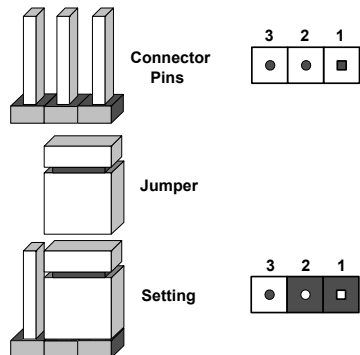


Figure C-2: Jumper Locations

Explanation of Jumpers

To modify the operation of the backplane, jumpers can be used to choose between optional settings. Jumpers create shorts between two pins to change the function of the connector. Pin 1 is identified with a square solder pad on the printed circuit board. Note: On two pin jumpers, "Closed" means the jumper is on and "Open" means the jumper is off the pins.



Jumper Settings		
Jumper	Jumper Settings	Note
JP35	1-2: Reset 2-3: No reset	MG9072 chip reset

Socket Settings		
Socket	Socket Setting	Note
JP18	Connected to front panel	Buzzer reset* Press once to disable buzzer Press twice to enable buzzer

*The buzzer sound indicates that a condition requiring immediate attention has occurred.

The buzzer alarm is triggered by the following conditions:

1. Hard drive failure
2. Fan failure
3. System temperature over 45° Celsius.

Fan Jumper Settings

This backplane can use up to three fans. To utilize each fan, you must configure **both jumpers** as instructed below.

Fan Jumper Settings		
Jumper	Jumper Settings	Note
JP61	1-2: With fan 2-3: No fan	FAN #1 select
JP97	1-2: With fan 2-3: No fan	FAN #1 select
JP62	1-2: With fan 2-3: No fan	FAN #2 select
JP98	1-2: With fan 2-3: No fan	FAN #2 select
JP63	1-2: With fan 2-3: No fan	FAN #3 select
JP99	1-2: With fan 2-3: No fan	FAN #3 select

I²C and SGPIO Modes and Jumper Settings

This backplane can utilize I²C or SGPIO. SGPIO is the default mode and can be used without making changes to your jumpers. The following information details which jumpers must be configured to use I²C mode or restore your backplane to SGPIO mode.

SGPIO and I ² C Jumper Settings (Default)			
Jumper	SGPIO Jumper Setting (Default)	I ² C Jumper Setting	Note
JP84	1-2	2-3	Controller ID #1

Front LED Indicators

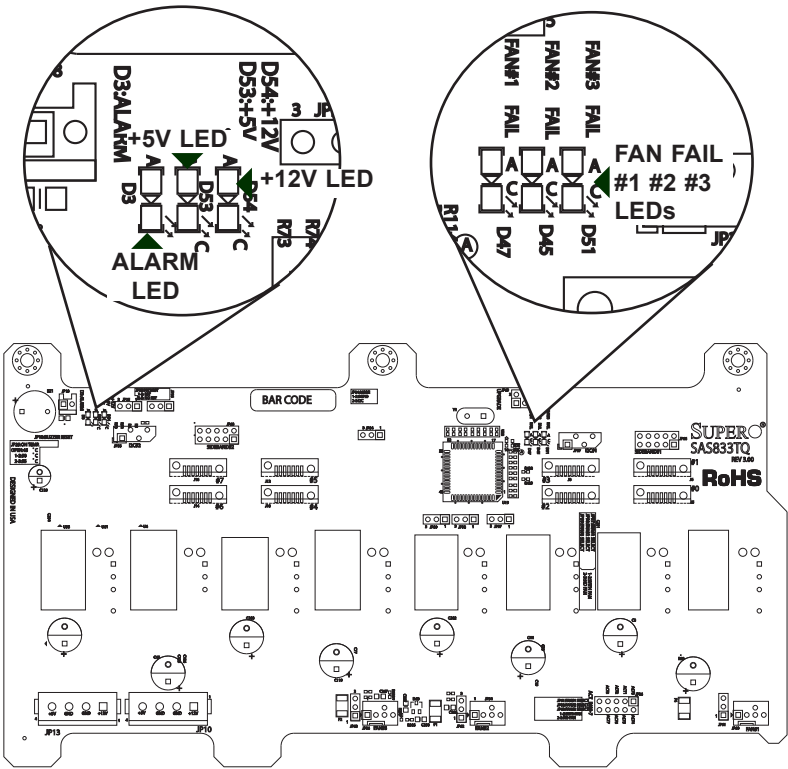


Figure C-3: Front LEDs

Front Panel LEDs		
LED	Normal State	Specification
Fan #1 fail	Off	Failure in Fan #1
Fan #2 fail	Off	Failure in Fan #2
Fan #3 fail	Off	Failure in Fan #3
Alarm #1	Off	Overheat/drive failure
+5V	On	Backplane power failure. Light is on during normal operation.
+12V	On	Backplane power failure. Light is on during normal operation.

C-8 Rear Connectors and LED Indicators

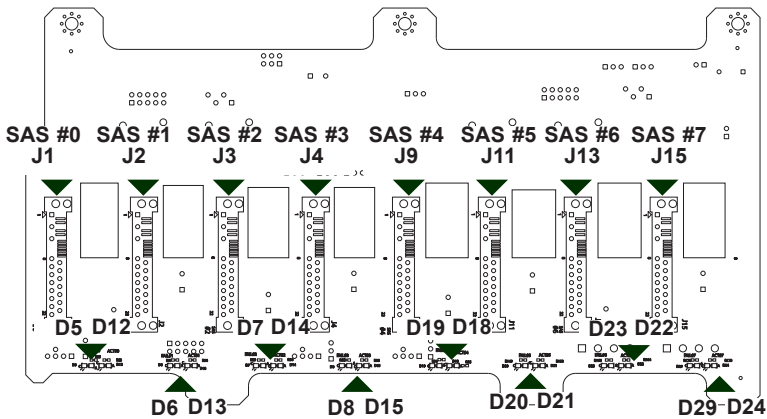


Figure C-4: Rear Connectors

Rear SAS/SATA Connectors	
Rear Connector	SAS/SATA Drive Number
SAS #0	SAS/SATA HDD #0
SAS #1	SAS/SATA HDD #1
SAS #2	SAS/SATA HDD #2
SAS #3	SAS/SATA HDD #3
SAS #4	SAS/SATA HDD #4
SAS #5	SAS/SATA HDD #5
SAS #6	SAS/SATA HDD #6
SAS #7	SAS/SATA HDD #7

Rear LED Indicators		
Rear LED	Hard Drive Activity	Failure LED
SAS #0	D12	D5
SAS #1	D13	D6
SAS #2	D14	D7
SAS #3	D15	D8
SAS #4	D18	D19
SAS #5	D21	D20
SAS #6	D22	D23
SAS #7	D24	D29

Disclaimer (cont.)

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